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United States Patent [19]

Ikawa et al.

[11] **Patent Number:** 5,395,792[45] **Date of Patent:** Mar. 7, 1995[54] **PROCESS FOR FABRICATING A SEMICONDUCTOR LASER DEVICE**[75] **Inventors:** Katsuhiko Ikawa; Hiroshi Matagi,
both of Kyoto, Japan[73] **Assignee:** Rohm Co., Ltd., Kyoto, Japan[21] **Appl. No.:** 252,349[22] **Filed:** Jun. 1, 1994[30] **Foreign Application Priority Data**Jun. 2, 1993 [JP] Japan 5-132167
Aug. 25, 1993 [JP] Japan 5-210542[51] **Int. Cl.⁶** H01L 21/20[52] **U.S. Cl.** 437/129; 148/DIG. 95[58] **Field of Search** 437/129; 148/DIG. 95[56] **References Cited****U.S. PATENT DOCUMENTS**4,567,060 1/1986 Hayakawa et al. 437/129
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Murray & Oram[57] **ABSTRACT**

There is provided a process for fabricating a highly reliable semiconductor laser device operable at a low current with an increased yield, which process includes the steps of: (a) forming a lower clad layer on a semiconductor substrate; (b) forming an active layer of a material larger in refractive index and smaller in forbidden band width than the lower clad layer; (c) forming a first upper clad layer of a material smaller in refractive index and larger in forbidden band width than the active layer; (d) forming an etch stop layer made of GaAs on the first upper clad layer; (e) forming a current-blocking layer of a material smaller in refractive index and larger in forbidden band width than the first upper clad layer; (f) forming a stripe cavity by etching at least a portion of the current-blocking layer down to the etch stop layer; (g) evaporating the etch stop layer remaining in the stripe cavity; (h) forming a second upper clad layer of a material smaller in refractive index and larger in forbidden band width than the active layer while larger in refractive index and smaller in forbidden band width than the current-blocking layer; and (i) forming a contact layer of a material larger in refractive index and smaller in forbidden band width than the active layer.

7 Claims, 4 Drawing Sheets